

IV. CLAIM AMENDMENTS

Claims:

1. (Currently Amended) A method for transmitting an encryption number in a communication system ~~(1)~~ comprising:

mobile terminals, ~~(MT1-MT4)~~ and

at least a first access point ~~(AP1)~~ and a second access point ~~(AP2)~~,

the method comprising the steps of:

[—] defining a set of encryption keys,

[—] selecting at each said access point ~~(AP1, AP2)~~ from said set of encryption keys one to be used at a time for encrypting information to be transmitted between said access point ~~(AP1, AP2)~~ and a mobile terminal ~~(MT1-MT4)~~,

[—] transmitting from the access point ~~(AP1, AP2)~~, at intervals, data about the encryption key selected at the time,

[—] setting up a data transmission connection between a mobile terminal ~~(MT1-MT4)~~ and the first access point ~~(AP1)~~ for the transmission of information, and

[—] performing a handover, whereby a data transmission connection is set up between the second access point ~~(AP2)~~ and the mobile terminal ~~(MT1-MT4)~~,

characterized ~~in that in the method,~~ wherein in connection with the handover, information is transmitted to the mobile terminal ~~(MT1-MT4)~~ about the encryption key selected at the second access point ~~(AP2)~~.

2. (Currently Amended) The method according to claim 1, **characterized** ~~in that~~ wherein each encryption key in said set of encryption keys is allocated an encryption number ~~(KI)~~,

~~wherein~~ and said encryption number ~~(KI)~~ is used as said data about the encryption key selected.

3. (Currently Amended) The method according to claim 1, in which information is transmitted in data frames ~~(FR)~~, **characterized in that** ~~wherein~~ the encryption key is changed in connection with each data frame ~~(FR)~~.

4. (Currently Amended) The method according to claim 3, in which some of the data frames are used as common data frames for transmitting information from the second access point ~~(AP2)~~ to more than one mobile terminal ~~(MT1-MT4)~~, **characterized in that** ~~wherein~~ said data about the encryption key is transmitted in another data frame than said common data frame.

5. (Currently Amended) The method according to claim 1, **characterized in that** ~~wherein~~ said set of encryption keys is stored in said access points ~~(AP1, AP2)~~ and in the mobile terminal ~~(MT1-MT4)~~.

6. (Currently Amended) The method according to claim 1, **characterized in that** ~~wherein~~ the mobile terminal ~~(MT1-MT4)~~ informs said second access point ~~(AP2)~~ about a need for handover, ~~wherein~~ and said second access point ~~(AP2)~~ transmits information about the encryption key selected at the second access point ~~(AP2)~~ at the moment to the mobile terminal ~~(MT1-MT4)~~.

7. (Currently Amended) The method according to claim 1, **characterized in that** ~~wherein~~ the mobile terminal ~~(MT1-MT4)~~ informs said first access point ~~(AP1)~~ about a need for handover, ~~that~~ said first access point ~~(AP1)~~ transmits information about

the handover to said second access point ~~{AP2}~~, ~~wherein and~~ said second access point ~~{AP2}~~ transmits information about the encryption key selected at the second access point ~~{AP2}~~ at the time to the mobile terminal ~~{MT1---MT4}~~.

8. (Currently Amended) The method according to claim 1, ~~characterized in that~~ wherein the first access point ~~{AP1}~~ executes a forced handover, in which the mobile terminal ~~{MT1---MT4}~~ communicating with said first access point is transferred to communicate with said second access point ~~{AP2}~~, ~~that~~ said first access point ~~{AP1}~~ transmits information about the handover to said second access point ~~{AP2}~~, ~~wherein and~~ said second access point ~~{AP2}~~ transmits information about the encryption key selected at the second access point ~~{AP2}~~ at the time to the mobile terminal ~~{MT1---MT4}~~.

9. (Currently Amended) A mobile communication system ~~{1}~~ comprising:

mobile terminals ~~{MT1---MT4}~~,

at least a first access point ~~{AP1}~~ and a second access point ~~{AP2}~~;

a set of encryption keys being defined in the communication system ~~{1}~~;

the access point ~~{AP1,---AP2}~~ comprising means for ~~selected~~ selecting from said set of encryption keys one at a time to be used for encryption of information to be transmitted between said access point ~~{AP1,---AP2}~~ and a mobile terminal ~~{MT1---MT4}~~, and

means for transmitting information about the encryption key selected at the time at intervals from the access point ~~{AP1,---AP2}~~;

the communication system ~~{1}~~ also comprising:

means for setting up a data transmission connection between the mobile terminal ~~(MT1-MT4)~~ and the first access point ~~(AP1)~~ for the transmission of information, and

means for executing a handover and setting up a data transmission connection between the second access point ~~(AP2)~~ and the mobile terminal ~~(MT1-MT4)~~, ~~characterized in that~~

wherein the mobile communication system ~~(1)~~ also comprises means for transmitting information about the encryption key selected at the second access point ~~(AP2)~~ to the mobile terminal ~~(MT1-MT4)~~ in connection with the handover.

10. (Currently Amended) The mobile communication system ~~(1)~~ according to claim 9, ~~characterized in that~~ wherein it also comprises means for defining an encryption number for each encryption key in said set of encryption keys ~~(ST)~~,

wherein said encryption number ~~(KI)~~ is arranged to be used as said information about the encryption key selected.

11. (Currently Amended) The mobile communication system ~~(1)~~ according to claim 9, which comprises means for transmitting information in data frames ~~(FR)~~, ~~characterized in that~~ wherein the encryption key is arranged to be changed in connection with each data frame ~~(FR)~~.

12. (Currently Amended) The mobile communication system ~~(1)~~ according to claim 11, in which some of the data frames are arranged to be used as common data frames for transmitting information from one access point ~~(AP2)~~ to more than one mobile terminal ~~(MT1-MT4)~~, ~~characterized in that~~

wherein said data about the encryption key is arranged to be transmitted in another data frame than said common data frame.

13. (Currently Amended) The mobile communication system ~~(1)~~ according to claim 9, ~~characterized in that~~ wherein said set of encryption keys is stored at said access points ~~(AP1, AP2)~~ and mobile terminal ~~(MT1-MT4)~~.

14. (Currently Amended) The mobile communication system ~~(1)~~ according to claim 9, ~~characterized in that~~ wherein the mobile terminal ~~(MT1-MT4)~~ comprises means ~~(8, 11, 30)~~ for informing said second access point ~~(AP2)~~ about the need for a handover, wherein and data is arranged to be transmitted from said second access point ~~(AP2)~~ to the mobile terminal ~~(MT1-MT4)~~ about the encryption key selected at the second access point ~~(AP2)~~ at the time.

15. (Currently Amended) The mobile communication system ~~(1)~~ according to claim 9, ~~characterized in that~~ wherein the mobile terminal ~~(MT1-MT4)~~ comprises means ~~(8, 11, 30)~~ for informing said first access point ~~(AP1)~~ about the need for handover.

16. (Currently Amended) The mobile communication system ~~(1)~~ according to claim 9, ~~characterized in that~~ wherein:

the first access point ~~(AP1)~~ comprises means for performing a forced handover, wherein the mobile terminal ~~(MT1-MT4)~~ communicating with said first access point is arranged to be handed over to communicate with said second access point ~~(AP2)~~, and

means for transmitting information about the handover to said second access point ~~(AP2)~~, wherein information about the encryption key selected at the second access point ~~(AP2)~~ at the

time is arranged to be transmitted from said second access point
~~(AP2)~~ to the mobile terminal ~~(MT1-MT4)~~.